

**ABSTRACT OF THE DISCLOSURE****METHOD AND APPARATUS FOR INCREASING  
CAPACITY OF MAGNETIC MEDIA STORAGE**

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A method and apparatus for increasing the capacity of magnetic media storage is disclosed. More specifically, an improved two-sided magnetic tape is disclosed. In one implementation, in order to mitigate pack winding problems, a trade-off can be made between the back-coat roughness of a side of the magnetic tape and the mechanical imprint of that roughness in the recording surface of that side (e.g., compromise between roughness and recording density). For example, a recording density and coding scheme deemed appropriate for a relatively large recording head-to-media separation can be used for the "rougher" side of a two-sided tape, and the highest recording density achievable can be used for the "best" or smoothest side of the two-sided tape.

Depending on the recording density/roughness match selected, an optimum capacity gain can be selected from a range of capacity gains with values between 1 and 2 (e.g.,  $1 < (\text{gain in capacity}) < 2$ ). Thus, for relatively slow spooling applications, an optimum recording density/roughness match can be selected with less roughness for the tape surface(s) involved, and for relatively fast spooling applications, an optimum recording density/roughness match can be selected with more roughness for the tape surface(s) involved.